MODULE HANDBOOK
Digital Image Processing

BACHELOR DEGREE PROGRAM

DEPARTMENT OF MATHEMATICS

FACULTY OF SCIENCE AND DATA ANALYTICS

INSTITUT TEKNOLOGI SEPULUH NOPEMBER

MODULE HANDBOOK
DIGITAL IMAGE PROCESSING

Module name	**Digital Image Processing**
Module level	Undergraduate
Code	KM184723
Course (if applicable)	Digital Image Processing
Semester	Fall (Gasal)
Person responsible for the module	Dr. Dwi Ratna Sulistyaningrum, MT
Lecturer	Dr. Dwi Ratna Sulistyaningrum, MT
Language	Bahasa Indonesia and English
Relation to curriculum	Undergraduate degree program, **elective**, 7th semester.
Type of teaching, contact hours	Lectures, <60 students
Workload	1. Lectures : 2 x 50 = 100 minutes per week. 2. Exercises and Assignments : 2 x 60 = 120 minutes (2 hours) per week. 3. Private learning : 2 x 60 = 120 minutes (2 hours) per week.
Credit points	2 credit points (sks)
Requirements according to the examination regulations	A student must have attended at least 80% of the lectures to sit in the exams.
Mandatory prerequisites	Object Oriented Programming Elementary Linear Algebra
Learning outcomes and their corresponding PLOs	Course Learning Outcome (CLO) after completing this module, CLO-1 Able to understand the concept and basic techniques of image processing CLO-2 Able to understand the fundamental algorithm and how to implement it with programming language CLO-3 Be able to apply the concept for more complex image processing applications individually or in groups
Content	Image processing is a course that contains the basic concepts of digital image processing and basic algorithms for image processing. Image processing techniques include enhancement, restoration, segmentation, image compression and mathematical morphology. In addition, this course will also discuss mathematics which is used for

	image processing, namely Fourier transformation, and morphological mathematics.
Study and examination requirements and forms of examination	• In-class exercises • Assignment 1, 2, 3 • Mid-term examination • Final examination
Media emyed	LCD, whiteboard, websites (myITS Classroom), zoom.
Reading lists	Main : 1. R. C. Gonzalez and R. E. Woods, “Digital Image Processing”, Third Edition, Pearson, 2008 2. John C. Russ, “The Image Processing Handbook”, Sixth Edition, CRC Press, 2011. Supporting : 1. *Gonzalez, Woods, and Eddins, “Digital Image Processing Using MATLAB (DIPUM)",* Prentice Hall, 1st edition , 2004